

ON MAJOR NAVAL OPERATIONS

Milan Vego

Major naval operations are the principal methods of combat force employment by which operational or strategic objectives are accomplished in a conventional high-intensity war at sea. The U.S. Navy and other major Western navies planned and executed a large number of major naval operations in World War II as part of maritime and, in several cases, land campaigns. However, such major operations have been conducted on few occasions since 1945. The main reason for that is that none of the numerous regional conflicts fought in the past

sixty years have involved large navies on both sides. The U.S. Navy and other major navies are currently involved in operations short of war, such as peace-keeping and peace enforcement, maritime interception operations (MIO), and protection of friendly shipping against various hostile acts on the high seas, such as piracy or transnational terrorism. Among other things, they are also employed in preventing illegal immigration and drug smuggling. In some cases, employment of one's naval forces, such as support or counterinsurgency (COIN) or MIO, might be aimed at achieving operational objectives. However, such actions lack many attributes of conventional major naval or joint operations. The focus here is exclusively on those planned and conducted in a conventional high-intensity conflict.

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WHAT IS A MAJOR NAVAL OPERATION?

There is no common agreement in the United States or the West on a definition of what constitutes a major naval operation. The term “naval operation” so often used by the U.S. Navy and other Western navies is too broad and imprecise. For example, “naval operation” is explained in the U.S. military as pertaining to “a naval action or the performance of naval missions, which may be strategical, tactical, logistical, or training.” This definition apparently does not make any distinction between objectives to be accomplished at sea and corresponding methods of combat force employment. It confuses the issue by mixing the combat employment of naval forces with logistics and training. An alternative meaning of the same term is “the process of carrying out or training for naval combat to gain the objective of any battle or campaign.”¹ The absence of the term “major naval operation” is a clear proof of the lack of a coherent theory of operational warfare at sea. The U.S. Navy also still does not have a servicewide doctrine focused on the operational level of war at sea. Yet operational art is the principal focus of all joint doctrinal documents in the U.S. military.

In comparison, the former Soviet navy devoted extraordinary efforts to developing a theory of what it called “naval operations” in the early 1930s and through the 1980s. Naval operations constituted the very heart of the Soviets’ naval operational art. Yet the Soviets were distinctly unsuccessful in applying their theories in practice during the war with Nazi Germany, 1941–45. From 1945 until the collapse of the Soviet Union in 1991, the Soviet navy was never involved in real combat. Hence, one can only speculate whether its actual performance would have been any better than it was during World War II.

In one of the many Soviet definitions of the term, a naval operation (*morskaya operatsiya*) was described as a series of naval battles, engagements, and strikes coordinated in terms of objective, place, and time and conducted in an assigned area (zone) of an oceanic or sea theater of military action (TVD in the Russian acronym, theater of operations in Western terms). It was carried out by specially established groups, independently or in cooperation with formations, forces, or troop units of other services, according to a common idea and plan for accomplishing a single and especially important operational or operational-tactical task. Naval operations are controlled by a fleet commander.²

In generic terms, a major naval operation can be understood as *a series of related major and minor naval tactical actions conducted by several naval combat arms and combat arms of other services, in terms of time and place, and aimed to accomplish an operational (and sometimes limited strategic) objective in a given maritime theater. Major naval operations are planned and conducted in accordance with an operational idea (scheme) and common plan. They are normally an integral*

part of a maritime or land campaign, but they can sometimes be conducted outside of the framework of a campaign.

The best (and proven) way of avoiding attrition at the operational and strategic levels is by planning and executing major operations and campaigns, respectively. With a major naval operation, the stronger side at sea can defeat the weaker in a place and at a time of its own choosing. Major naval operations are normally planned and conducted when decisive results have to be accomplished as quickly as possible and at the least loss.³ Successful major naval/joint operations can contribute considerably to shortening a war at sea.

The Roots

In the era of sail and until the late nineteenth century, the principal method of combat employment of one's fleet to attain an operational or strategic objective was the "decisive naval battle." Some decisive battles—for example, the battle of Trafalgar on 21 October 1805—led to drastic changes in the strategic situation at sea. Combat employment of naval forces gradually changed with the technological advances of the middle and late nineteenth century. The steady improvement in the performance of ships' steam propulsion plants and the internal combustion engine had made it possible to fit powerful engines in even small ships. The introduction of torpedoes and mines led to the design of new small platforms capable of posing a serious threat to the survivability of larger ships. This, in turn, led to a proliferation of small warships of all types and classes. The numerical strength of the major navies steadily increased. In addition to battleships and cruisers, they also included a large number of smaller surface combatants, such as destroyers, torpedo craft, gunboats, and auxiliaries.⁴

By the end of the nineteenth century the importance of a decisive battle had been steadily reduced because of the increased size and changing composition of the major navies. Instead of single decisive battles to achieve an operational or even strategic objective, war at sea between two strong opponents was fought over a large area and almost continuously. Numerous tactical actions were conducted by both large and smaller surface combatants. Operational deployment of combat forces became an integral part of a major clash between opposing fleet forces instead of something separate. The Russo-Japanese War of 1904–1905 was the first conflict at sea in which diverse naval actions were conducted almost continuously. These actions occurred over large parts of the Yellow Sea, the Sea of Japan, and parts of the Pacific Ocean.⁵ In retrospect, the battle of Tsushima in May 1905 was the last "decisive" naval battle in history. Yet this was not grasped by the theoreticians or practitioners of the day. Up to the beginning of World War I, all the world's major navies planned to seek a decisive battle

(also called “general fleet action”) and thereby obtain command of the sea in a single clash of battle fleets.

In the last decade before the outbreak of World War I, the major navies continued to build both large and small naval vessels in quantity. For example, by 1914, the Royal Navy had in service 542 warships, including sixty-eight battleships, 110 cruisers, and 218 destroyers. The Imperial German Navy then had 301 ships (thirty-seven battleships, forty-eight cruisers, 142 destroyers, forty-seven torpedo boats, and twenty-seven U-boats).⁶ The advent of submarine and aircraft added second and third dimensions to the maritime battlefield. The ability to control the movements and actions of fleet elements over large ocean areas was considerably enhanced by new signaling devices and wireless telegraph. Fleet commanders were able to communicate with subordinate tactical commanders many hundreds of miles out at sea. The cumulative effect of all these technological advances was to make major navies of the day capable of conducting actions almost continuously, over large sea or even ocean areas, and employing diverse platforms and weapons. The very size of the major navies of the day, with their widely dispersed bases and installations, made it increasingly difficult, if not impossible, to achieve decisive results by a general fleet action.

During World War I several large-scale fleet-versus-fleet actions took place, in the North Sea, the Mediterranean, the Adriatic, the Baltic, and the Black Sea. Of these, the battle of Jutland, fought on 31 May–1 June 1916, came closest to what can be considered a major naval operation. It comprised a series of small engagements and attacks aimed at operational objectives. Admiral Reinhard Scheer (1863–1928), the commander of the German High Seas Fleet (Hochseeflotte), planned to sail out from Wilhelmshaven at about midnight on 30 May and then proceed northward, staying well off the Danish coast, and arrive the next afternoon off the western entrance to the Skagerrak. Afterward, the main body of the High Seas Fleet and Vice Admiral Franz von Hipper (1863–1932), commander of the Scouting Group (battle cruisers), would jointly launch an attack on the British merchant ships and cruiser escorts that German intelligence believed to be in the area. Afterward, Hipper with his battle cruisers would head north and advertise his location by steaming very close to the Norwegian coast in broad daylight, while Scheer would sail some fifty miles to the rear but out of sight of shore. Scheer was confident that as soon as the British learned the whereabouts of Hipper’s battle cruisers they would send their battle cruisers on a high-speed dash across the North Sea to cut off Hipper’s retreat to his home base. Scheer’s plan was to attack the enemy battle cruisers jointly with Hipper’s force next morning.⁷ In short, the German plan was to bring the strength of the British Grand Fleet down to parity with that of the High Seas Fleet.⁸ By coincidence Jellicoe also planned a sortie with his Grand Fleet to the Skagerrak area on

1 June 1916. His main objective was to lure the German High Seas Fleet to the north and fight a general fleet action. As it turned out, Scheer sortied only one day earlier than Jellicoe planned.⁹

In the ensuing clash of the opposing forces, the Germans won a tactical victory in terms of losses in materiel and personnel inflicted on the Grand Fleet. The British lost fourteen ships (three battle cruisers, three armored cruisers, eight destroyers/torpedo boats) and some 6,100 men (out of a total of sixty thousand), while the German losses amounted to eleven ships (one predreadnought battleship, one battle cruiser, four light cruisers, and five destroyers/torpedo boats) and about 2,550 men (out of thirty-six thousand).¹⁰ However, operational success was clearly achieved by the British. In the aftermath of the battle the situation in the North Sea and adjacent sea areas remained essentially what it had been before the battle. Both opponents continued to watch each other and acted essentially as active fleets-in-being. The Entente's blockade of the Central Powers was not weakened. The Royal Navy continued to ferry troops and supplies across the English Channel to France. The Germans retained their naval control of the Baltic theater.

The first major naval operation against the enemy coast was conducted by the Austro-Hungarian fleet, shortly after Italy's decision to enter the war on the side of the Entente Powers on 24 May 1915. This operation had been planned by the Austro-Hungarian navy's commander in chief, Admiral Anton Haus (1851–1917), in 1910, even though Italy was formally his country's ally at that time. The main objective of that raid was to cut off Italian rail communications along the eastern coast of the Adriatic leading to the front on the Isonzo River. Another objective was to create fear and possibly panic among the Italian populace living in the coastal area.¹¹ The Austrian assumption was that the Italians would try at the very outset of the hostilities to achieve a decision by employing their entire fleet in the northern Adriatic. Hence, the Austrians also decided to employ a major part of their fleet in the operation.¹² The action would be successful only if full surprise was achieved, and that meant it had to be carried out shortly after the beginning of hostilities.¹³

The Austro-Hungarian fleet carried out the raid as planned and employed rather large forces: four battleships, one armored and five protected cruisers, six large destroyers, seven destroyers, and thirty torpedo boats. The Austrian ships and naval aircraft bombarded fourteen ports and the coastal railroad from Venice to Brindisi. Targets included ports Porto Corsini (near Ravenna), Senigallia, Rimini, Ancona, the Potenza estuary, and Venice.¹⁴ The Austrian aircraft conducted raids against Venice and airship hangars at Chiaravalle. The Austrian ships also sank three Italian destroyers. This was the largest action of the Austro-Hungarian fleet during the entire war. The Austrian bombardment of

the coastal settlements and rail lines caused little material damage; Italian morale, however, was significantly depressed. There was a widespread belief among the Italian populace that their navy could not prevent such raids in the future. Moreover, it was believed that the Italian fleet was incapable of conducting similar actions against the Austro-Hungarian coast.¹⁵

During World War I, the first major joint naval operations emerged: the Entente's amphibious landing at Gallipoli in April 1915 and the German landing on the Latvian coast in October 1917 are the best known examples. The principal objectives of the Gallipoli landing operation were to take Turkey out of the war, open a direct link with the Entente's embattled ally Russia, force the Germans to shift troops from the Russian front, and influence Greece to side openly with the Entente Powers.¹⁶ The allied attack on the Dardanelles was poorly planned and executed. The naval plan prepared by Admiral Sackville Carden was approved on 13 January 1915, and a formal decision for the attack was made on 28 January. Carden's plan was to use twelve old battleships, three battle cruisers, three light cruisers, one flotilla leader, sixteen destroyers, six submarines, four seaplanes, twelve minesweepers, and some miscellaneous craft for the naval attack on the Dardanelles.¹⁷ In a major omission, Carden was never directed to integrate the naval attack with the landing of ground forces.¹⁸ Naval bombardment started on 19 February; and bombardment of the outer forts started on 25 February. The initial attacks were fairly successful. However, the Turkish resistance proved to be much greater than anticipated. The Turks also heavily mined the straits, and the allied minesweepers were unable to clear the mines. On 18 March, out of sixteen battleships that ultimately took part in the bombardment, three battleships—two British and one French—ran into mines and were sunk, and three others were heavily damaged.¹⁹ The British and French losses included seven hundred sailors killed in a single day.

After the failure of the naval attack, the allies finally made a decision to commit ground troops to capture control of the straits. The initial forces for ground assault consisted of about seventy-five thousand British troops under General Sir Ian Hamilton. Specifically, this force comprised the British 29th Division and the Royal Naval Division, and the Australian and New Zealand Army Corps (ANZAC), composed of the 1st Australian Division and the New Zealand and Australian Division. In addition, the French made available on 10 March some eighteen thousand colonial troops of the 1st Division.²⁰ The Turkish defenses of the straits were greatly improved after 24 March when the German general Liman von Sanders took command of the Turkish Fifth Army at the Dardanelles. He had to defend a coastline of 150 miles with just eighty-four thousand men (of whom only sixty-two thousand were combat ready) organized in six divisions. Only about twenty thousand men were defending the Gallipoli Peninsula.

The main landing at Cape Helles was carried out by about thirty-five thousand men of the 29th Division and elements of the Royal Naval Division on 25 April. Smaller, diversionary landings took place the same day, involving some seventeen thousand largely untrained troops of the New Zealand and Australian Corps, farther north at Ari Burnu (later renamed Anzac Cove). The 6th Colonial Regiment of the French 1st Division conducted a temporary landing at Kum Kale at the neck of the peninsula.²¹

The allied troops seized the initial lodgment ashore but were unable to enlarge it because of stiff resistance by the Turks. The fighting evolved into trench warfare. Neither side was able to gain much ground, and both suffered heavy losses. By August 1915, the allied forces amounted to twelve divisions. A new landing was conducted in early August at Suvla Bay aimed to link with the ANZAC forces at Anzac Cove. After some gains, the entire operation ultimately failed, and the Turks recaptured Suvla Bay.

Despite all these efforts, the Allied troops were unable to make much progress on land. In the end, there was no other option but to abandon the entire operation. The evacuation was carried out in two stages: on 18–19 December 1915 and 8–9 January 1916. Losses on both sides were heavy. The allies eventually committed a total of about 490,000 troops (including seventy-nine thousand French) to the operation and suffered 252,000 casualties (including about 44,100 killed). The Turks employed some 500,000 troops and suffered about 251,300 casualties (including some 86,700 killed).²²

A more successful amphibious landing operation was Operation ALBION, conducted by the German navy and army in October 1917. This was the first German joint operation of such size and complexity. The operational objective was to seize control of the island of Oesel and thereby open the Gulf of Riga and thus threaten the rear of the Russian Twelfth Army, defending the Baltic coast. The aim was to land one reinforced division on the island of Oesel. Tagga Bay was selected as the landing objective area. Based on the lessons learned from the Entente's failure in the landing at Gallipoli, the Germans committed about 24,600 men, supported by a large naval force.²³ The Germans achieved complete surprise, and the entire operation was a resounding success. The Twelfth Army was eventually destroyed, and the threat to the flank of General Oskar von Hutier's German Eighth Army was eliminated.²⁴

World War I at sea proved that the fleets of the major opponents were too large and deployed too widely to be destroyed during a single general fleet action or even two. It signaled the final demise of the decisive battle. It also demonstrated that *operational* objectives in the theater could be accomplished primarily by a series of related major and minor naval tactical actions sequenced and synchronized in time and place—in modern terms, a major naval operation. Deployment,

clashes of opposing forces, pursuit, and withdrawal/redeployment were meshed to constitute a seamless whole. The entire naval operation was planned, prepared, and conducted by a single commander. It was based on a definite idea and a common plan.

In the interwar years, most major Western navies, and also the Japanese navy, focused almost exclusively on the practical application of operational warfare, through planning, war gaming, and exercises at sea. In 1927, the U.S. Naval War College adopted for the first time the study of “operational” problems in addition to “strategical” and “tactical” ones. This practice continued in the 1930s. In war games held at the Naval War College in the 1930s the U.S. Navy repeatedly tested its plan ORANGE for operational employment of fleet forces in a hypothetical war with Japan. In the early 1930s, the U.S. Marine Corps embarked on an intensive effort to create its first operational doctrine for large-scale amphibious landings. The result was the *Tentative Manual for Landing Operations*, issued in 1934. This manual borrowed heavily from the proper lessons learned in the Entente’s unsuccessful Gallipoli landing in 1915 and the successful German ALBION operation. After 1935 this document was used as a guide for amphibious exercises and research and development.²⁵

The German navy used planning games, war games, and exercises extensively in preparing for a future war at sea. By the early 1930s it had introduced “operational,” in addition to strategic and tactical, war games. In the late 1930s, as a result of these games, the German naval high command became convinced of the prospective need to seize parts of the southern Norwegian coast and the French Atlantic coast in order to escape the constraints imposed by the geography of the North Sea and to be able to employ its forces operationally in the Atlantic. The tactical concept of using U-boats at night and on the surface was first described in 1922 in a study by two German naval officers. Their ideas were refined during war games in the early 1930s and became part of the U-boat doctrine in 1935.²⁶ This innovative concept was tested for the first time during the large-scale *Wehrmacht* exercises held in the fall of 1937. Doenitz used shortwave radio from his flagship in Kiel and directed the employment of submarine groups in the Baltic. Afterward, the concept was tested during another, larger exercise held in the North Sea. In May 1939 the U-boats operated in groups in the Atlantic off Cape Finisterre and in the Bay of Biscay for the first time.²⁷

In contrast, the Soviets focused on developing a theory of naval operations as part of their emerging theory of operational art. Their theories were incorporated into the Red Navy’s doctrine. The Soviet *Field Manual of 1930* (BU-30) was the first doctrinal document to spell out the rudiments of joint operational employment of naval forces and ground troops. Afterward, the Soviets developed the theory of what they called “naval operations”—specifically, reconnaissance,

amphibious landings and anti-amphibious operations, and operations on sea lines of communications. Five years later, the Soviet navy adopted the new *Combat Manual of Naval Forces* (BU-MS-37). Here for the first time was presented an elaboration of “naval operations” and “day-to-day (routine) activities” as the principal methods by which the combat employment of naval forces and aviation would accomplish operational objectives. The new manual envisaged a dozen types of naval operations, aimed at destroying the enemy forces at sea, against coastal “objects” (installations), on sea communications and blockade, in support of own sea communications and counterblockade, landing operations, antilanding operations, and operations in support of the army flank. The day-to-day activities of the fleet forces would accomplish operational objectives by establishing what the Soviets called a “favorable operational regime” in their coastal waters and deployment areas.²⁸ Soviet views on the nature of modern warfare at sea and operational art were incorporated into the *Provisional Manual on Conduct of Operations* (NMO-40), issued in 1940. However, the Soviet theory of naval operations was very poorly applied during the country’s war with Nazi Germany.

In World War II, all the major navies conducted, independently or in cooperation with other services of the armed forces, a large number of major naval operations in all the maritime theaters of war. Among many major naval operations, a few stand out because of their importance to the course of the war. Major clashes of opposing surface forces in the Pacific (notably the battles of the Coral Sea in May 1942, Midway in June 1942, the Philippine Sea in June 1944, and Leyte in October 1944) were not “battles” as such but major naval operations. In the Atlantic Ocean, the Germans in May 1941 conducted a major naval operation (RHEINUEBUNG), with Combat Group *Bismarck* (the 42,600-ton battleship *Bismarck* and the fifteen-thousand-ton heavy cruiser *Prinz Eugen*), aimed at interrupting Allied maritime traffic in the North Atlantic. The escape in February 1942 of two German battle cruisers (*Scharnhorst* and *Gneisenau*, of 38,100 tons at full load) and one heavy cruiser (*Prinz Eugen*) from Brest to Kiel through the English Channel (Operation CERBERUS) was a major naval operation. The purpose was to redeploy these heavy ships away from where they had been threatening Allied maritime traffic in the southwest approaches to England, moving them to Norway to strengthen German defenses against possible Allied invasion. The British carrier attack on the Italian naval base at Taranto in November 1940 (JUDGMENT) and the Japanese attack on Pearl Harbor in December 1941 (HAWAII) were also major naval operations aimed at destroying major parts of enemy fleets at their bases. The Allies also conducted many major amphibious landing operations in all theaters during World War II, especially in the Pacific.

Since the end of World War II only a few major naval operations have been conducted. One reason is that most regional wars in that time have not involved major navies. Two exceptions, however, were the blockade of North Korea's coast during the Korean War (1950–53) and the American blockade of the South Vietnamese coast (MARKET TIME, March 1965–December 1972). The Israelis planned and conducted what can be considered a major naval operation to obtain local sea control off the Egyptian and Syrian coasts during the Yom Kippur (Ramadan) War of October 1973. The British recapture of the Falklands in 1982 (Operation CORPORATE) was a major naval/joint operation with a *limited strategic objective*. The operations of the coalition naval forces in the Gulf War of 1990–91 and also in the war against Iraq in 2003 (Operation IRAQI FREEDOM), to establish and maintain control of the northern part of the Arabian (Persian) Gulf, constituted a major combined naval operation.

Purpose

In terms of its principal purpose, a major naval operation can be offensive or defensive. *Offensive* major naval operations are normally conducted by the stronger side at sea, but they also can be planned on the defensive. The stronger side would mount a single major naval operation or several in succession to obtain and then maintain sea control. Such operations can also greatly reduce or eliminate threats posed by numerically larger forces and thereby facilitate operations in other parts of a maritime theater, as the Japanese attack on Pearl Harbor illustrates. An offensive major naval operation can also be planned as part of a defensive campaign, as was the Japanese commitment of a major part of the Combined Fleet in defense of the Philippines in October 1944. Major naval operations against enemy maritime trade and amphibious landing operations are inherently offensive in their purpose.

A major naval operation with an offensive purpose is usually planned and conducted in the initial phase of the war to obtain sea control and afterward in exercising sea control. It can also be conducted when one side has only local and temporary control, as Allied amphibious landings in the Pacific in World War II illustrate. Major naval operations in enclosed and semienclosed seas (collectively called “narrow seas”) can be conducted within either a strategically offensive or a strategically defensive framework. For either one, limited, temporary sea control should be obtained first. Major naval operations aimed at protecting maritime trade can be conducted even when command of the sea is in dispute. The main factor for success then is at least control of the sea, the subsurface, and the air in the proximity of a large convoy. For example, the Royal Navy mounted several major operations in 1942 to supply the besieged island of Malta, although Axis forces possessed overwhelming strength in the air. The Allies

suffered extremely high losses in these operations from Axis land-based aircraft and submarines. It is also possible to conduct a major naval operation when friendly forces control only the air and the subsurface, as the Germans did in capturing the key bases and ports in the initial phase of their invasion of Norway in April 1940.

A *defensive* major naval operation is usually planned and executed when one side is forced onto the defensive at sea by permanent or temporary weakness. Then, the weaker side may conduct major defensive naval operations to oppose attacks on its naval bases and anchorages, enemy amphibious landings and attacks on coastal installations or facilities, and to carry out major evacuations of friendly troops and civilians. Both sides in a war at sea will occasionally mount major naval or joint operations in defense and protection of maritime trade.

A major naval operation is conducted as an integral part of a maritime, and sometimes a land, campaign. It is aimed at bringing about a radical or drastic change in the operational situation in a maritime theater; if a major naval operation is only partially successful, the operational situation is likely to remain as it had been, as the battle of Jutland in June 1916 illustrates. A major naval operation can have a strategic effect as well. This usually occurs when a surprise attack on a major part of the enemy's fleet is carried out at the very onset of hostilities, to accomplish a strategic objective in a principal theater of operations. For example, the operational objective of the surprise attack on Pearl Harbor on 7 December 1941 was to destroy enough of the U.S. Pacific Fleet to prevent it from interfering with the Japanese invasion of the Philippines. However, the unintended and highly negative (for Japan) effect was to shift American public opinion from isolationism to unequivocal support for complete victory over Japan.

A war at sea predominantly consists of a large number of tactical actions conducted in coastal waters, on the high seas, and also on the open ocean. Such major and minor tactical actions can accomplish specific operational objectives, but only after a longer time. However, the key to ultimate success in war at sea is avoiding situations in which objectives must be accomplished predominantly—or even worse, exclusively—through force-to-force encounters or attrition. Attrition warfare not only results in much higher losses, even for the stronger side, in terms of lives and materiel but is inherently protracted. One's forces are tied down, and until given operational objectives are accomplished they cannot be employed for other urgent tasks in other oceans or sea areas. This happened to the Allies in the struggle for Guadalcanal between August 1942 and February 1943. The initial major naval operation—the amphibious landing on Guadalcanal (Operation WATCHTOWER) on 7 August 1942—was highly successful. Afterward, however, the Allies became progressively involved in a series of small but costly tactical actions with Japanese forces on land, at sea, and in the air. This included seven major naval battles, most of them

fought in the night, and numerous smaller tactical actions at sea.²⁹ The U.S. Navy lost most of these battles, because the Japanese were much more proficient in night gunnery and torpedo tactics. However, both sides lost approximately the same number of ships.³⁰ This attrition phase lasted almost seven months before the Japanese decided to give up their attempts to regain control of Guadalcanal. By then, the Allied operational tempo had been considerably slowed; no further major landings up the Solomons chain had been possible with Guadalcanal not yet secure. A good argument can be made that had the Allies been able to conduct a consecutive major naval or air operation to consolidate initial operational success, the struggle for Guadalcanal would have ended much earlier and with far smaller losses in ships, aircraft, and personnel for the Allies.

Types

Based on the degree of participation of various services and arms, naval, joint (multiservice), and combined (multinational) major naval operations can be differentiated. A *major naval operation*, as such, is conducted predominantly by a navy, although air or even ground forces can take part as well. Examples of major operations conducted by naval forces are the battles of Cape Matapan (March 1941), the Coral Sea (May 1942), Midway (June 1942), and the Philippine Sea (June 1944).

A major *naval/joint* operation is planned and conducted by forces of the navy but with substantial participation by other services. In a maritime theater encompassing a large ocean or sea area, major naval operations would involve significant air forces, and maybe ground forces as well. In contrast, major naval operations in littoral waters are likely to require participation of all three services. All major amphibious landing operations are inherently joint, as are major operations against enemy maritime trade or in defense of maritime trade in the littorals.

A major *naval/combined* operation is conducted with two or more navies or services of the armed forces of two or more countries. Today, major combined operations constitute a frequent method of employing naval forces in low-intensity conflict. In fact, because of the downsizing of most navies, they might well become routine for major regional contingencies or even general war. A major amphibious landing operation is sometimes combined with it, as was the case in the invasion of Sicily (Operation HUSKY) in July 1943, the landing in Normandy (NEPTUNE) in June 1944, and the UN amphibious landing at Inchon (CHROMITE) in September 1950.

Sometimes several major naval/joint operations can take place in a single maritime theater of operations. Such a situation would occur in the initial phase of a new campaign when several operational objectives must be accomplished

sequentially or simultaneously. In that case, the one aimed at the most important operational objective will be the main or principal operation, and the others will be supporting (ancillary) operations. For example, the Allied amphibious landing at Leyte on 20 October 1944 was the main or principal major naval/combined operation. The actions of Task Force (TF) 38 as distant cover and support between 17 October and 27 November constituted a supporting major naval operation.

In terms of their timing, one can distinguish between initial, successive, and preliminary major naval operations. The *initial* major operation is planned and conducted to accomplish the first, and most operational, objective in a campaign. For example, the Japanese Operation MI (that is, the battle of Midway) was the initial major naval operation in a projected maritime campaign in the Central Pacific. The Allied invasion of the Gilberts in November 1943 (GALVANIC) was the initial major joint operation in a series of major operations within the Central Pacific campaign (November 1943–September 1944). A *successive* (or *consecutive*) major operation normally starts during or shortly after the initial major operation. Its purpose is to consolidate or expand the operational success of the preceding major operations. The U.S. invasions of the Marshals (Operations FLINTLOCK and CATCHPOLE) and the Marianas (FORAGER) are examples. A *preliminary* major naval operation is usually planned to isolate a maritime area of operations in which a new campaign or major operation is to be conducted. The purpose is often to prevent the arrival of enemy reinforcements in troops, aircraft, or materiel. Another purpose might be to deceive the enemy as to the intended sector of main effort. For example, TF-38's series of air strikes and other actions against the Ryukyus, Formosa, and Luzon between 10 and 17 October 1944 constituted a preliminary major naval operation—that is, with respect to the invasion of Leyte.

Major naval operations can be conducted on the open ocean or in the littorals (waters contiguous to the continental landmass, and peripheral, enclosed, and semienclosed seas, respectively). Most major naval operations have taken place fairly close to continents, large islands, or oceanic archipelagoes. Many have taken place in enclosed or semienclosed seas (collectively called “narrow seas”). Today, because of enormous advances in the range and lethality of weapons, even coastal navies composed of small surface ships, submarines, and land-based aircraft can conduct major naval operations.

Major naval operations in the littorals are generally more complicated to prepare and execute than those on the open ocean, because they involve diverse forces and assets of all services of the country's armed forces. They also differ from major naval operations on the open ocean because of the much smaller operational space involved and the smaller forces used.

The initial position used by one's forces in the initial phase of a major naval or joint operation often considerably affects the course of the operation as a whole, sometimes even its outcome. In general, the force can operate from a central or exterior position. In the case of employment of multiservice or multinational forces in the same operation, some forces can operate from central positions, others from exterior positions. Each position has some advantages and some disadvantages in respect to the employment of naval forces and aviation. It would be a mistake to believe that a central position is inherently more advantageous than an exterior one. Experience shows that not only victories but also defeats have ensued for forces operating from a central position.

A major naval/joint operation can be conducted along interior or exterior lines of operations. *Interior lines* are completely or partially enveloped by the enemy; hence, they originate from a central position. The opposing force, then, operates along exterior lines.³¹ Admiral Alfred T. Mahan (1840–1914) observed that interior lines are in fact a central position prolonged in one or more directions. “Interior line” implies that from a central position one can assemble more quickly on either of two opposite fronts than the enemy can and therefore can utilize forces more effectively.³²

Moving along interior lines, one's naval forces can be interposed between two or more parts of the enemy force, concentrating against one as quickly as possible in order to destroy the bulk of the enemy force, while holding the others in check with a force that is possibly inferior. Interior lines are inherently shorter than those the hostile force occupies on the periphery, a fact that can be used effectively in both offense and defense. The key prerequisites for the success of major naval operations on interior lines, then, are sufficient physical space and ability to move forces quickly.³³ For example, in the Russo-Japanese War of 1904–1905 the Japanese fleet occupied a central position between the Russian major naval bases at Port Arthur and Vladivostok and checkmated both places. The Japanese armies could be transported across the Tsushima Strait and through the Yellow Sea because the Japanese fleet was interposed between the Russian Far Eastern Squadron in Vladivostok and the force in Port Arthur. Thus, the Japanese fleet commander, Admiral Heihachiro Togo (1846–1934), could prevent the junction of the Russian squadrons to interfere with Japanese communications. In another example, TF-58 and TF-38 operated along interior lines during the battle of the Philippine Sea (June 1944) and the battle for Leyte (October 1944), respectively.

A force is said to operate along *exterior lines* when its lines of movement are separated by those of the enemy. These lines are generally longer than the shortest line the enemy force can use. A major naval/joint operation conducted along exterior or converging lines comprises concentric advances from several sea or ocean areas toward common physical objectives. The most important prerequisite

for the proper use of exterior lines is sufficient combat strength in each part of one's forces.³⁴

The advantages and disadvantages of exterior lines are the reverse of those of interior lines. Exterior lines allow simultaneous concentric actions from several directions against the enemy's center.³⁵ A force moving along exterior lines can select the point of attack along the enemy's periphery. Exterior lines generally facilitate the shifting of forces to meet an external threat while maintaining communications and covering distances to approach the enemy's force. The inherent advantage of a force moving along exterior lines is that it can threaten the enemy with envelopment. However, such a force moves along longer lines of operations than its opponent does. The greater the distance between the base of operations and the attack objective, the longer the lines of supply. Also, unless each force element is stronger than the enemy force opposed to it, there is a constant danger of defeat in detail. An inherent feature of all amphibious landings is that the attack forces initially operate from an exterior position. Once the amphibious forces land ashore, they operate from a central position and along interior lines.

Not only must a force operating along exterior lines move faster than its opponent moving along interior lines, but also its adjacent elements have to keep within mutual supporting distance, if, again, the force is to avoid being defeated in detail. Sometimes forces can operate beyond mutually supporting distance, provided that each prong of the advance is stronger than possible opposition, as illustrated by the Japanese conquest of the Netherlands East Indies in December 1941–April 1942.

A major naval or joint operation from an exterior position also requires precise synchronization of movement and actions by one's forces. This is difficult to achieve, especially when the distance between one's base of operations and the physical objective is great. For example, in the Leyte operation, the Japanese First and Second Diversionary Attack forces and the Mobile Force (Main Body) started their movements toward the Philippines from exterior positions. Likewise, the TF-38 carrier force operated from the exterior in regard to its targets on Luzon, the central Philippines, and adjacent sea areas. The Allied amphibious force that landed at Leyte also operated from an exterior position during its transit and approach phases.

MAJOR NAVAL OPERATIONS IN WAR

In generic terms, the main purposes of a major naval/joint operation today in the case of a high-intensity conflict at sea can be to

- Destroy the enemy fleet at sea or in its bases
- Conduct an amphibious landing on the opposed shore
- Destroy enemy coastal installations and facilities

- Attack enemy maritime trade
- Defend and protect one's own maritime trade
- Destroy enemy sea-based strategic nuclear forces
- Protect one's own sea-based strategic nuclear forces
- Support friendly ground forces on the coast.

A major operation aimed at *destroying an enemy fleet at sea or in its base* is the quickest and most effective—but most difficult—way to establish sea control in a given maritime area of operations. These operations can be conducted on the open ocean or in narrow seas. Historically, several major operations have been aimed at destroying an enemy fleet at sea or in its bases at or shortly before the outbreak of hostilities. Most fleet-on-fleet encounters in World War II took place when one fleet provided distant cover and support of a major amphibious landing, as happened at Leyte in October 1944, or when the stronger fleet used the landing to lure an inferior force into a “decisive” battle, as the Japanese Combined Fleet attempted in Operation MI, which led to the battle of Midway in June 1942.

A major naval or joint operation to destroy an enemy fleet might be necessary when the attacker provides support of the flank to his forces operating in the coastal area or when the enemy fleet is forced to operate in a certain sea or ocean area. If the stronger side at sea attempts to isolate certain sea/ocean areas, then the objective could be the destruction of major parts of the enemy fleet forces. Likewise, though a major operation to destroy the enemy fleet at sea is difficult for a numerically weaker side, that side might decide to plan one in order to weaken or lift a blockade. In a typical enclosed or semienclosed sea, such an operational objective could be accomplished by massive strikes by surface combatants, submarines, and land-based aircraft. Preparation time would have to be short because of rapid changes in the situation at sea and in the air. Such an operation would most likely encompass a single phase, with one or several synchronized strikes by naval forces, aircraft, and coastal missile or artillery batteries.³⁶

Major naval/joint operations in distant ocean areas are not likely to be conducted in the near future, because there are no longer two or more major potential opponents at sea. A more likely scenario is a conflict between the navies of riparian states in an enclosed or semienclosed sea, or between a blue-water navy and a coastal navy operating in the littorals. Hence, attacks on naval bases or anchorages, combined with attacks at sea, seem to be the most likely method open to a stronger navy to destroy or neutralize a smaller fleet.

A prerequisite for success in a major naval operation to destroy an enemy fleet in its bases is usually local, temporary sea control. However, this is not always necessary. In the past, the best results were achieved by striking from beyond the effective range of the enemy's defenses. Today, nuclear-powered attack submarines, modern conventionally powered submarines, land- and carrier-based aircraft, and surface ships armed with long-range cruise missiles are the most effective platforms for destroying enemy ships in their bases. Attack submarines armed with antiship missiles or land-attack cruise missiles can strike enemy naval bases from several hundred nautical miles away. For example, in the first few days after the start of the air offensive against Iraq on 17 January 1991, American carrier-based aircraft and attack submarines deployed in the Arabian Gulf and the Red Sea repeatedly struck Iraqi naval installations near Umm Qasr and Basra with "smart" bombs and Tomahawk missiles.³⁷

Air strikes against enemy naval bases in an enclosed sea, such as the Arabian (Persian) Gulf, can be far more effective than those mounted from the open ocean, because of the much shorter distances and the larger number of land-based aircraft that can be used. These strikes can be conducted with high intensity and repeated at short intervals. In some instances, not only fixed-wing aircraft but also missile-armed helicopters can be effectively employed.

In the initial phase of a war in an enclosed sea theater, the principal objective of a major naval operation would be to obtain the desired degree of sea control, thereby creating favorable conditions for carrying out other operational tasks—specifically, supporting friendly ground forces on the coast. An absolute prerequisite would be air superiority in the maritime theater.³⁸ The objective would be accomplished by destroying the enemy's surface forces and submarines; destroying or suppressing tactical air forces at their airfields; destroying enemy antisubmarine forces at sea, in their bases, or at airfields; suppressing or destroying enemy air defenses; and suppressing or interfering with command posts and electronic surveillance. In the second phase of the operation, the fleet forces would carry out strikes against enemy forces at sea and their bases and airfields in the sea's only exit and its approaches.³⁹

Amphibious landing operations are the most effective ways of projecting power on an enemy shore. They are also extremely complex to plan and execute. They are inherently joint in character, regardless of their purpose or the size of the forces involved. Amphibious assault landings within enclosed or semi-enclosed seas would take place across much shorter distances and are normally smaller than those mounted against coasts on open oceans. Sometimes, however, an invasion mounted across a narrow sea can exert a strategic influence, in the case of the opening of a new front, as was true of the Allied Normandy

invasion of June 1944, or causing a radical change in a strategic situation, as in the case of the UN landing at Inchon in September 1950.

Today, a large-scale amphibious landing in an enclosed or semienclosed sea would be difficult to execute if the defender effectively used land-based aircraft, submarines, and combat craft in combination. Amphibious landings are aimed at seizing an area of enemy-controlled coast that gives access to a military operational objective inland; speeding the advance of one's troops along the coast or the end of the war itself; eliminating or taking control of a large naval base or port; preventing the adversary from seizing a base or port; cutting off an enemy army's avenue of escape; and countering enemy evacuation efforts across the sea. A credible amphibious capability may also help to tie a sizable enemy force to the defense of a large stretch of its mainland coast or offshore islands.

In U.S. terms, the emerging doctrine of Operational Maneuver from the Sea (OMFTS) developed by the Marine Corps represents the application of operational art in planning and conducting amphibious landings. The tactical component of this concept, the ship-to-objective maneuver (STOM), envisions moving Marine air-ground task forces directly to the assigned operational objective deep in the enemy's rear. Such an action will be carried out without stopping to seize, defend, and build up beachheads or landing zones. STOM is predicated on the existence of a sea base deployed in international waters.⁴⁰

A major naval operation aimed to *destroy enemy coastal installations and facilities* can be conducted as a preliminary to an amphibious landing or as an integral part of a naval blockade. Such major operations can be conducted with naval or air forces or with both jointly. The primary purpose of attacks can be destruction or neutralization of the enemy naval or commercial ports, airfields and airports, shipbuilding and ship-repair industries, rail and road traffic, shore/offshore oil and gas production, and refining industries. For example, the main purpose of TF-38's attacks in mid-October 1944 was to destroy Japanese ports, shipyards, and airfields in the Ryukyus and on Formosa and Luzon. Today, longer-range and more capable carrier- and land-based aircraft, armed with cruise missiles and "smart" bombs, make it possible to attack the enemy coastal installation and facilities along a large part of the enemy coast and far into the depth of his defenses. Major navies today have a much greater ability than in the past to attack a variety of targets far in the enemy's operational and even strategic depths.

Major naval operations on the open ocean and in littoral waters are conducted to *interrupt or cut off enemy maritime trade* or to *defend and protect one's own maritime trade*.⁴¹ Maritime trade is conducted almost continuously for the duration of a war at sea. Each convoy or independent sailing ship represents only a fraction of the traffic volume in a maritime theater at a given time. Correspondingly, most naval actions attacking the enemy's or defending and protecting friendly

maritime trade will be tactical in character. Major operations will be conducted only occasionally and then only in a certain part of the sea or ocean. When a major effort must be mounted to attack or protect a large convoy, its objective is an operational one.

To be effective, actions against the enemy's military-economic potential must be conducted systematically over a relatively large area and against all the elements of the enemy's maritime trade. Specifically, this includes attacks on enemy convoys, independently sailing ships, ports, and cargo loading and off-loading facilities; rail and road junctions in the littoral area; shipyards and ship-repair facilities; and shipping-related industries. In enclosed seas, attacks on enemy maritime trade and protection of one's own are usually made with the full participation of not only one's naval forces but also land-based air and, in some cases, coastal defense forces and ground forces. Such a major operation would usually consist of a single phase, but it would be conducted with high intensity. Some such operations could be divided into phases, with short pauses between.

A major naval operation aimed to interrupt or cut off enemy traffic would normally be conducted when sea control is in dispute or the enemy has slight superiority. Such an operation would consist of a series of massive missile, torpedo, air, and artillery strikes, plus offensive use of mines. Some theoreticians claim that enemy maritime traffic can be considered interrupted when traffic in a certain area is reduced by 20 to 25 percent, while cutting off maritime traffic means dropping total volume by 40 to 50 percent.⁴²

An attack on the enemy's maritime traffic in the littorals would consist primarily of smaller naval tactical actions conducted over relatively large areas of the maritime theater and over time. Such actions would be aimed at interrupting enemy shipping traffic to such a degree as to have an effect on land-front combat. A major naval operation would usually be planned and executed when there was significant enemy traffic in a certain area. It could also be aimed against ships carrying raw materials. Such an operation would be unified by a common concept and carried out in several phases. The prerequisite for the success of such an operation is full knowledge of all elements of the enemy's maritime trade. Aviation, submarines, special forces, and coastal defense forces would take part in such an operation.⁴³

One of the most effective methods of preserving the maritime component of one's military-economic potential is a major naval/joint operation to *defend and protect maritime trade*. Specifically, such an operation is aimed at preventing interruption or cutoff of shipping carrying troops, weapons, military equipment, or strategic raw materials. In some cases, such an operation can be aimed to protect friendly shipping lines in coastal waters.⁴⁴ It is indicated when shipping

lanes must be made secure or when friendly convoys must be protected from attack. Normally such an operation can be executed in a single phase. Its duration depends on the length of the shipping routes, how long ships stay in ports and anchorages, and convoy-assembly time. Smaller convoys and individual ships can sail independently, without protection.⁴⁵

Today, only large navies have the capability to mount major operations aimed at *destroying the enemy's sea-based strategic nuclear forces*—that is, ballistic-missile submarines (SSBNs) and their supporting elements. Such major operations might be focused on destroying enemy SSBNs either in their basing areas, in their patrol zones, or in transit between them. Likewise, a major naval operation might be conducted to *protect one's sea-based strategic nuclear forces*. Such major operations would most likely be carried out predominantly by naval forces, specifically nuclear-powered attack submarines in the open ocean and patrol aircraft overhead. However, in areas closer to one's own or the enemy's coast, such operations will probably be more joint, because air forces will be expected to take part.

Major naval operations in *support of ground forces on the coast* are conducted both in marginal seas of oceans and in semienclosed or enclosed seas. They may become most frequent in the seas bordering continents (e.g., the Black Sea, the Baltic, or the Arabian Gulf). Tactical actions are a dominant method by which fleet and air forces support troops on the coast. However, a major naval operation can be planned to destroy a hostile fleet threatening one's troops operating along the coast; to seize, by an amphibious landing, a major island, strait, or part of the enemy-held coast; to defend one's own coast against an amphibious landing; to attack the enemy's or protect one's maritime trade; to conduct a large-scale evacuation of troops or civilians; and so on.

One's naval forces would play the principal role in major anti-amphibious operations. Such operations would be carried out against enemy landings regardless of the ratio of forces. Success would depend on timely detection of the enemy movement to land, activation of coastal defense systems, and deployment of forces. A major anti-amphibious operation would normally consist of four main phases: strikes against the assembly areas of the enemy invasion forces, actions to destroy enemy forces at sea, the battle for the bridgehead, and engagements in the depth of the landing objective area. For each phase, the defender should determine an objective to be accomplished.⁴⁶

Major Naval Operations vs. Naval Tactical Actions

Major naval operations differ considerably from naval tactical actions in terms of the level of command that plans, prepares, and executes them; the decision-making and planning processes; force composition; the size of the sea or ocean area in which combat takes place; its duration; and the scale of combat support.

Major naval operations should be planned, prepared, and conducted by the naval component or functional commanders (e.g., in U.S. terms, numbered fleet commanders and joint/combined force maritime component commanders, or JFMCC/CFMCC) subordinate to a theater commander (that is, commanders of theaters of war or of operations). Sometimes an operational-tactical commander (or joint task force commander) and staff can plan and conduct major naval/joint operations. Unlike a tactical commander, the operational commander also has overall responsibility for logistical support and sustainment.

The decision to fight a naval tactical action is based upon a short-term estimate of the situation, while determination upon a major naval operation requires what is known as a “long-range estimate.” In preparing that estimate, especially for a major naval/joint operation in the littorals, the operational commander must take into account all aspects of the situation in a given theater—military, political, economic, sociological, ethnic, and climatic—projecting them for several weeks or months. Because of the resulting much wider range of uncertainty and the larger scope of a major operation, in comparison to a tactical action, a long-range estimate of the situation will necessarily contain more assumptions. In turn, the more assumptions a plan contains, the more likely it is to require alteration, modification, or radical changes, or even have to be abandoned during the execution phase.

In contrast to a naval tactical action, major naval/joint operations are invariably planned ahead of time. They are normally prepared, except for the initial phase of a war at sea, only when forces have at least local superiority over their opponent, whereas tactical actions can be conducted regardless of the ratio of forces. Major operations and campaigns are planned using a “regressive” method, in which the ultimate operational objective is determined first and then, working backward, several major tactical and some minor tactical objectives are determined.

A major naval/joint operation normally requires larger and more diverse forces than a naval tactical action. For example, in the battle of Midway in June 1942, the Japanese Combined Fleet employed four separate elements totaling 165 warships.⁴⁷ The U.S. forces that took part in the battle of Midway consisted of seventy-six warships and about 110 land-based Army, Navy, and Marine aircraft based on the island of Midway.⁴⁸ However, some major naval operations in World War II involved fewer ships and aircraft. In the “*Bismarck Chase*” (RHEINUEBUNG, for the Germans) the Germans directly employed the *Bismarck* group, six escort tankers, and one supply ship; three destroyers, two patrol ships, two blockade breakers (*Sperrbrecher*), one minesweeper flotilla, thirteen U-boats, one Italian submarine, and three Luftwaffe air groups were also used, in support.⁴⁹

For its part, the Royal Navy employed directly or indirectly five battleships, three battle cruisers, two aircraft carriers, eleven cruisers, thirty-three destroyers, and eight submarines to defeat Combat Group *Bismarck*.⁵⁰

Enormous increases in mobility and in the range and lethality of weapons allow operational objectives today to be accomplished with smaller forces than would have been possible only a few decades ago. Today's major blue-water navies possess far fewer ships than they did during World War II or the early 1950s. A major naval operation in littoral waters will include more small ships and land-based aircraft than would those on the open ocean.⁵¹ Such an operation requires the employment of a variety of naval combat arms and often of air forces; in the littoral waters, such operations would also require the participation of ground forces.

Forces taking part in a major operation on the open ocean are deployed over a large part of a theater of operations, even though the majority of its constituent tactical actions take place in a single maritime area. For example, the forces that took part, in some way, in the battle of Midway operated from the Japanese home islands to the American West Coast and from the Aleutians to the Central Pacific. The battle for Leyte, in the larger sense, covered an area of about 432,000 square miles (including the eighty-five thousand square miles of the Philippines) and encompassed a major part of the western Pacific and smaller sectors of the central, southern, and southwestern Pacific. The actual fighting, however, encompassed only about 110,000 square miles.⁵²

Major naval/joint operations in the future are most likely to take place in enclosed or semienclosed seas, such as the Arabian (Persian) Gulf, or in such peripheral waters as the South China Sea. Yet a blue-water force like the U.S. Navy would deploy its forces, other than those already deployed forward, from bases in the continental United States or other maritime theaters.

A major naval operation lasts considerably longer than a naval tactical action. While a naval battle or engagement is fought in several hours or less, a major naval operation can last a week or more. In general, a major naval operation in a high-intensity conflict lasts longer if the distance between the base of operations and the operating area is great or if the opposing force is difficult to destroy or neutralize because of its size or peculiarities of the physical environment. Such an operation also takes much longer to the extent that the objective is nonmilitary in nature, as would be the case in counterinsurgency or peace enforcement.

Characteristics

The main characteristics of a modern major naval/joint operation are the complexity of its planning, preparation, and execution; the involvement of diverse naval combat arms and often combat arms or branches of other services;

diversity of tactical actions in a relatively large part of the theater; high intensity of combat and proportionately high losses; extensive use of electronic warfare techniques; and the complexity of combat support required.

Because of the enormous increase in the combat potential of platforms, major naval operations of the future are likely to be highly intense indeed. This will be especially true in a littoral environment, because of the small area and correspondingly short distances. For that reason, in major naval operations today extremely high consumption rates of fuel and ammunition should be expected.

A major naval or joint operation in the littorals differs considerably from one on the open ocean because of the much more complex physical environment and, as noted, short distances between points. Among other things, geomorphological and hydrographic (or oceanographic) features in narrow seas greatly affect the employment of naval platforms, weapons, and sensors. The coast in a typical narrow sea is usually highly indented and fronted by a large number of islands and islets. This configuration greatly restricts the maneuverability of surface ships, especially major surface combatants and submarines. In shallow waters, large surface ships have to reduce their speeds sharply. Navigational conditions in narrow seas are often difficult because of shoals, reefs, strong tides, and currents.

A major naval operation in an enclosed or semienclosed sea will most likely encompass the entire body of water. The combat will take place on the surface, subsurface, on the coast, and in the air. Diverse combat arms of the navy and other services will be extensively employed. Covertiness of action and opportunities for achieving surprise are considerably enhanced by the combination of modern long-range and highly lethal weapons, such as antiship missiles and torpedoes, and the nature of the physical environment. Here again, combat between modern naval forces is likely to be short and intense and to result in high losses.

One of the main features of modern naval combat in an enclosed or semienclosed sea will be quick and frequent changes in the operational or even strategic situation. Modern electronic warfare techniques will be extensively used by both sides. This will cause great difficulties in using sensors and guided weapons, even make it impossible. The high speed of modern ships and aircraft and their ability to combine maneuver with "fires" allow one's side to achieve surprise as well as to gain superiority in place and time.

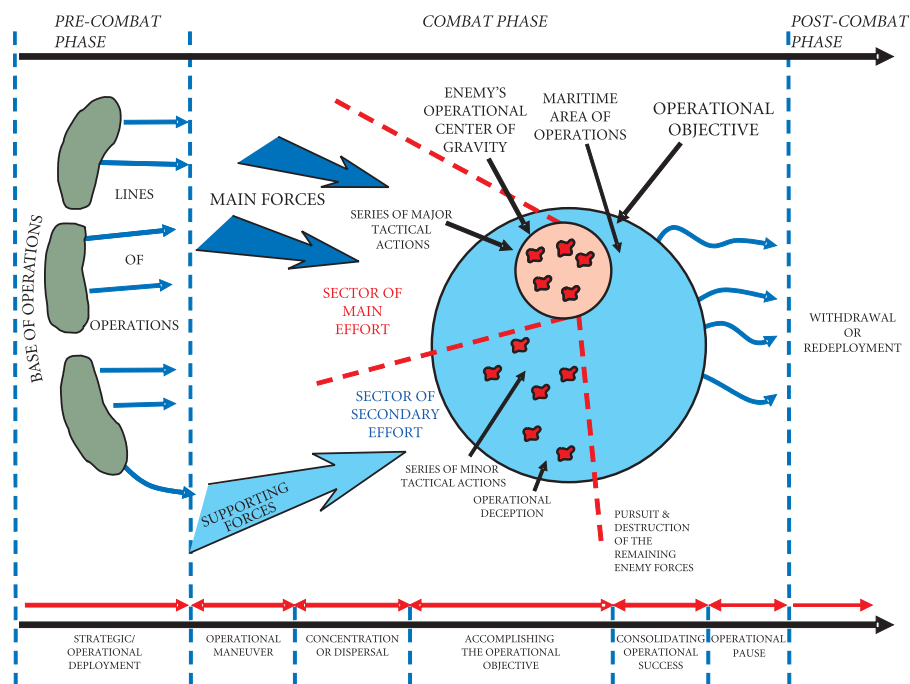
Combat actions in enclosed or semienclosed seas will of choice occur largely at night or in bad visibility. That necessarily means fighting at close range, making the deployment, redeployment, and maneuver of forces more difficult. In a typical enclosed or semienclosed sea, land-based aircraft will be one of the most effective means for striking enemy shipping and facilities. Their high degree of

readiness and maneuverability enables aircraft to concentrate strikes against transports, warships, or aircraft covering enemy ships at sea.

Elements

A major naval/joint operation in war, regardless of its purpose, comprises three main phases: deployment, combat employment, and postcombat. As for deployment, naval forces can conduct, depending on the initial bases, only operational deployment (i.e., within a given maritime theater of operations) or, in some cases, strategic deployment (movement from one maritime theater to another) (see figure). If one's forces are forward deployed, as are U.S. Navy forces currently in the western Pacific and in the Arabian (Persian) Gulf, in case of hostilities they would need to conduct an operational or even merely tactical deployment. In a typical enclosed or semienclosed sea, however, because of the generally much smaller area, naval forces would conduct tactical, rarely operational, deployments.

MAJOR NAVAL OPERATION AND ITS MAIN ELEMENTS



The combat phase of a major naval/joint operation would consist of one or more phases, differing in duration. Normally, combat would take place in a sector of main effort and one or more sectors of secondary effort. The major part of one's forces, arbitrarily called "main forces," would be employed in the former, while the rest, "supporting forces," would operate in the latter. The actions of one's main forces would be focused at destroying or neutralizing the enemy's

operational center of gravity in a series of related major and minor tactical actions. Supporting forces would at the same time try to tie down enemy forces to facilitate the success of the main forces. Normally, deception would be conducted in a sector of secondary effort. The cumulative effect should be accomplishment of the assigned operational objective. In the case of an offensive major naval/joint operation this operational success must be consolidated by pursuing and destroying the remaining enemy forces. The shift from combat phase to pursuit should be seamless, but an operational pause after the end of pursuit might be required to regenerate one's combat potential. Thereafter, forces might withdraw to their base or be redeployed for other tasks in the same or an adjacent theater.

Tactical actions in a major naval operation are not just a random collection of various combat actions but are all related to each other. They can be fought on the surface, subsurface, in the air, or, in some cases, on the coast. They are all connected by and conducted within a given operational framework; otherwise, they would not contribute to the accomplishment of the assigned operational objective and would therefore represent a waste of resources and sorely needed time.

Naval tactical actions can range from actions in which weapons are not used (such as patrolling and surveillance) to attacks, strikes, raids, engagements, and naval battles. As the term implies, they are aimed at accomplishing major or minor tactical objectives in a given part of a maritime theater. In some cases, a series of diverse tactical actions conducted over time can lead to the accomplishment of an operational objective.

The lowest and the most frequently conducted tactical action using weapons is a *naval attack*, a combination of tactical maneuver and weapons used to accomplish a minor tactical objective. It is usually an integral part of a strike. A naval attack can be conducted by a single or several types of platforms. It is usually aimed to destroy or neutralize a single enemy platform, tactical groups, or a target ashore. Attacks can be distinguished by the type of weapons used—missile, gun, torpedo, bomb, depth charge, or a combination thereof.⁵³ A naval attack can be conducted independently or as part of a strike or raid. The success of a naval attack depends largely on the surprise achieved, the degree of skill in maneuvering a platform or several platforms to obtain positional advantage, and the range, lethality, and precision of the weapons used. An example of a naval attack was the action by the U.S. submarines *Darter* and *Dace* on 23 October 1944 during the opening phase of the battle for Leyte. This attack resulted in the sinking of two Japanese heavy cruisers (*Atago* and *Takao*).⁵⁴ The actions of U.S. motor torpedo boats and destroyers in the battle of the Surigao Strait on the night of 24–25 October are examples of naval attacks conducted by single-type platforms. In the Battle of Samar on 25 October, U.S. destroyers conducted torpedo

counterattacks against Japanese heavy surface ships of the 1st Diversionary Attack Force.

With the advent of missiles and other long-range, highly precise, and lethal weapons, it became possible to destroy the enemy force at sea or on the coast at much longer range than with guns or torpedoes. The long-range missiles and smart bombs can be fired or dropped by a single or several ships, submarines, or aircraft and in quick succession. A new method of combat force employment, called “strike,” gradually replaced the naval battle and engagement as the principal method of accomplishing not only a major tactical but sometimes even an operational objective in war at sea and in the air. A well prepared strike is difficult to repulse. By using longer-range, more lethal weapons, the attacking forces can achieve success without suffering significant losses.⁵⁵

Depending on the scale and importance of the target to be destroyed or neutralized, strikes can be differentiated as tactical, operational, or strategic. However, destroying or neutralizing these targets is not identical to accomplishing the corresponding military objective; a number of targets must be struck and destroyed before an objective is achieved. A naval strike is usually conducted by two or more platforms of a single type of force—for example, missile surface combatants, submarines, or attack aircraft (helicopters). On an island-studded, archipelago-type coast, missile- or torpedo-armed surface combatants can conduct strikes from ambush against much stronger hostile forces. A strike can be carried out using conventional weapons (missiles, torpedoes, guns, bombs, etc.) or weapons of mass destruction (WMD). During the Yom Kippur (Ramadan) War, the Israeli navy conducted several successful strikes against the Egyptian and Syrian ships at sea. For example, a force of five Israeli missile craft struck a group of Syrian ships off Latakia on the night of 6–7 October 1973, sinking three Syrian missile craft, one torpedo boat, and a minesweeper.⁵⁶

Usually, in a strike conducted with several weapons, longer-range weapons are used first, to weaken the enemy’s defenses; then short-range weapons finish off the target. Thus, in a strike by missile-armed and torpedo-armed surface combatants, antiship missiles would be fired first, followed after a certain interval by torpedoes to finish off the enemy’s ships damaged by the missiles. A broader form of strike is a *naval raid*—conducted by a single or several naval combat arms to accomplish a tactical objective as a part of a major offensive or defensive naval operation. The aim is usually to deny temporarily some position or to capture or destroy an enemy force, coastal installation, or facility.⁵⁷ One’s temporary or local control of the sea is not a prerequisite for the success of a raid. The stronger fleet can also conduct raids to divert the enemy’s attention or force the enemy to react in a secondary sector of effort.

A naval raid is usually conducted against an objective that the enemy considers so valuable that its loss or serious degradation could not be ignored. A larger purpose of a naval raid is to accomplish some temporary advantage and also pose a threat of future repetition. Besides destroying installations, facilities, or forces on the coast, a naval raid can be aimed to enhance one's own morale or diminish that of the enemy. The action can range in scale from very small to very large; a large-scale raid can have many features of a major naval operation.

In the Gulf War of 1990–91, a landing party from a U.S. frigate seized Jazirat Qurah Island in the northern part of the Arabian Gulf.⁵⁸ A day later, a landing party and helicopter from another U.S. frigate captured the oil platforms in the Durah oil field.⁵⁹ In contrast, the Allied Dieppe raid (Operation JUBILEE), conducted on 19 August 1942, can be considered a significant military effort; some 6,100 troops, mostly Canadians, and 252 ships were employed. The main purpose of the Dieppe raid was to test German coastal defenses. After heavy fighting in which the Allies, especially Canadian troops, suffered heavy casualties (about 1,180 killed and 2,190 taken prisoner), the operation ended in unmitigated disaster for the Allies; the entire effort was abandoned.⁶⁰

The effect of a raid, like that of surprise, is usually transitory. However, depending on the enemy's reaction, the consequences of a well executed raid can be much greater than initially planned. For example, the raid on Tokyo on 18 April 1942, popularly known as the "Doolittle Raid," carried out by sixteen B-25 medium bombers launched from the carrier *Hornet* (CV 8) of Task Force 16 (TF-16), was an example of a naval raid that resulted in strategic consequences. It was launched about 670 miles from Tokyo, had a tremendous psychological impact on the Japanese, and greatly lifted American morale. A more important consequence of the raid was that the Japanese navy thereafter won the internal Japanese debate on whether to expand its defense perimeter in the Pacific.⁶¹ This led to the Japanese decision to initiate a new campaign in the central Pacific, of which Operation MI was the initial major naval operation. In the end, the Japanese suffered a disastrous defeat in the battle of Midway in early June 1942, which, in retrospect, was a turning point in the war in the Pacific.

In the past, a *naval engagement* consisted of a series of related strikes/counterstrikes and attacks/counterattacks conducted by main forces and aimed to accomplish the most important tactical objective in a naval battle. The clashes of opposing carrier forces in the Coral Sea in 1942, the battle of Midway in June 1942, and the battle of the Philippine Sea in June 1944 were examples of naval engagements.

A *naval battle* was until relatively recently the main method of accomplishing a major tactical objective as a part of a major naval operation. It consisted of a series of related attacks, counterattacks, strikes, and counterstrikes coordinated

in time and place. It was characterized by relatively long duration—several hours or even longer.⁶² Several naval combat arms, and often the combat arms of other services (e.g., air force, or troops defending the coast), participated in a naval battle. In World War II, numerous naval battles took place in almost all ocean or sea areas. The battles of Savo Island on 9 August and of Tassafaronga on 30 November 1942, fought between the Japanese and the Allied surface ships, are examples of naval battles. Defeat of the enemy fleet in a naval battle can sometimes result in not only operational but also strategic victory. To complicate the matter, however, a naval battle can be tactically won but nonetheless represent an operational (or even strategic) failure. Also, it can be tactically won but operationally lost, as happened to the U.S. Navy in the battle of Santa Cruz Islands on 26–27 October 1942 in the lower Solomons, and to the Japanese in the battle of Guadalcanal between 12 and 15 November 1942. For the near future at least, large naval battles are unlikely to be fought because most of the actions would take place between blue-water and coastal navies and in relatively small sea areas close to the landmass.

Prerequisites

The success of a major naval/joint operation is highly dependent on synchronization of theaterwide or operational functions. Sound theater command organization, then, is perhaps one of the most important prerequisites for the success of a campaign as a whole and of its subordinate major operations. All elements of operational functions are integral parts of the theater command organization. Other prerequisites for the success of a major naval operation include operational intelligence, operational command and control warfare, operational “fires,” operational logistics, and operational protection.

A major naval operation is the principal method of accomplishing operational objectives in a maritime theater. It can be the most effective way to achieve decisive results within a given time frame, bringing about a drastic change in the situation in a theater. The only alternative is attrition warfare, which should be avoided even when an operational commander enjoys numerical superiority. Nonetheless, Western naval theoreticians and planners have generally neglected major naval operations as an area of study in operational art. Too much emphasis is given instead to the tactical employment of naval forces and to various noncombat missions in operations short of war. The real danger is of creating the impression that no major naval operations will be conducted in the future—an impression that could not be more wrong. The absence of any serious threat at sea today should not delude anyone into believing that naval forces will never be required to plan and conduct major operations in the future. In any case, a

regional conflict could require the U.S. Navy to plan for and execute a major naval operation. Threats to national interests at sea tend to come with little warning. Fleets are built and maintained primarily not to conduct low-intensity conflict but to wage war, whether regional or global.

Major naval operations are categorized by their main purposes, the sea or ocean areas in which they are predominantly conducted, their timing, and the degree of participation by other services. Certain types have arisen from advances in naval technology and the evolution of warfare in maritime theaters. While naval forces will always play the most critical role in accomplishing operational or strategic objectives, other services and their combat arms will increasingly participate. This will be especially true in littoral waters, where the proximity and influence of a landmass allows not only land-based aircraft but ground forces to take part. Therefore, not only amphibious landings but also major naval operations against enemy maritime trade and in defense of one's own will increasingly become joint or even combined activities.

The focus of theory should be on major naval operations of the types most likely to be conducted. However, this does not mean that the other types of major naval operations should be neglected. For example, because of the absence at present of major naval opponents, major naval operations to destroy enemy fleets at sea are not likely in the near future; nevertheless, it would be very wrong for theoreticians to ignore them. Likewise, no blue-water navy, focusing on major naval operations in littoral waters, should in the meantime neglect the possibility of encounters on the open ocean.

The current highly unsatisfactory situation in maritime thought and doctrine can continue only as long as the U.S. Navy and other Western navies do not face a peer competitor. Adverse consequences may well then result if the opponent strives for superiority not through number of platforms and advanced weapons but by thinking and acting operationally instead of tactically.

NOTES

1. The U.S. Army's Field Manual (FM) 3-0, *Operations* (2001), and Joint Publication (JP) 3-0, *Doctrine for Joint Operations* (10 September 2001), defined a major operation as "a series of tactical actions (battles, engagements, and strikes) conducted by various combat forces of a single or several services coordinated in time and place, to accomplish operational and sometimes strategic objectives in an operational area"; FM 3-0 (2001), pp. 2-3; JP 3-0 (2001), pp. GL-12 and GL-13. The latest, slightly

different definition of a major operation is provided in the amended JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, JP 1-02 (12 April 2001, as amended through 1 March 2007); JP 3-0, *Joint Operations* (17 September 2006); and JP 5-0, *Joint Operation Planning* (26 December 2006), which define a major operation as "a series of tactical actions (battles, engagements, strikes) conducted by combat forces of a single or several Services, coordinated in time and place, to

- achieve strategic or operational objectives in an operational area. These actions are conducted simultaneously or sequentially in accordance with a common plan and are controlled by a single commander”; JP 1-02, pp. 321–22; JP 3-0 (2006), p. GL-21; and JP 5-0 (2006), p. GL-16.
2. Adolf Feil, ed., *Grundlagen der Theorie der operativen Kunst der SSK*, trans. Dieter Foerster and Bernd Kulbe (Dresden: Friedrich Engels Military Academy, March 1989), p. 24. Originally published in Russian as *Operativnoye iskusstvo voyenno-morskovo flota*.
 3. H. Engelmann, “Die Sicherstellung von Seeoperationen,” *Militaerwesen* (East Berlin) 3 (March 1980), p. 69; S. Filonov, “Morskaya Operatsiya,” *Morskoy Sbornik* 10 (October 1977), p. 24.
 4. In 1900, the Royal Navy consisted of 205 warships: forty-five battleships, 126 cruisers, and thirty-four torpedo gunboats; the French navy had in service thirty-three battleships, thirty-eight cruisers, and twenty-one torpedo gunboats; Ronald B. St. John, “European Naval Expansion and Mahan, 1889–1906,” *Naval War College Review* 23 (March 1971), p. 74.
 5. Feil, ed., *Grundlagen der Theorie der operativen Kunst der SSK*, p. 11.
 6. St. John, “European Naval Expansion and Mahan, 1889–1906,” p. 74.
 7. Keith Yates, *Flawed Victory: Jutland 1916* (Annapolis, Md.: Naval Institute Press, 2000), pp. 118–19.
 8. Elmer B. Potter and Chester W. Nimitz, eds., *Seemacht. Eine Seekriegsgeschichte von der Antike bis zur Gegenwart*, rev. ed. (Hersching, Ger.: Manfred Pawlak, 1986). Originally published as *The Great Sea War: The Story of Naval Action in World War II* (Englewood Cliffs, N.J.: Prentice Hall, 1960), p. 358.
 9. Yates, *Flawed Victory*, pp. 118–19.
 10. Geoffrey Bennett, *Naval Battles of the First World War* (New York: Scribner’s, 1968), p. 242.
 11. Potter and Nimitz, eds., *Seemacht*, p. 433.
 12. Hans Sokol, *Oesterreich-Ungarns Seekrieg 1914–18*, vol. 2 (Zurich: Amalthea-Verlag, 1933), p. 194.
 13. *Ibid.*, p. 195.
 14. *Ibid.*, p. 197; Paolo E. Coletta, *Allied and American Naval Operations in the European Theater, World War I* (Lampeter, Dyfed, Wales: Edwin Mellen, 1996), p. 312; Paul G. Halpern, *The Naval War in the Mediterranean 1914–1918* (Annapolis, Md.: Naval Institute Press, 1987), p. 118.
 15. Sokol, *Oesterreich-Ungarns Seekrieg 1914–18*, vol. 2, p. 218.
 16. James B. Agnew, “From Where Did Our Amphibious Doctrine Come?” *Marine Corps Gazette* (August 1979), p. 53.
 17. Alan Moorehead, *Gallipoli* (Baltimore, Md.: Nautical and Aviation, repr. 1982), p. 39.
 18. Tim Travers, *Gallipoli 1915* (Stroud, Gloucestershire/Charleston, S.C.: Tempus, 2001), p. 21.
 19. The battleships *Irresistible* and *Ocean* (British) and *Bouvet* (French) were sunk; the battle cruiser *Inflexible* (British) and battleships *Suffren* and *Gaulois* (French) were put out of action; Thomas G. Frothingham, *The Naval History of the World War: Offensive Operations 1914–1915* (Cambridge, Mass.: Harvard Univ. Press, 1925), p. 282; Julian S. Corbett, *History of the Great War Based on Official Documents*, vol. 2, *Naval Operations* (London: Longman, Green, 1921), p. 223.
 20. Travers, *Gallipoli 1915*, p. 270.
 21. *Ibid.*, p. 46; Jenny Macleod, *Reconsidering Gallipoli* (Manchester, England/New York: Manchester Univ. Press, 2004), p. 3.
 22. Moorehead, *Gallipoli*, p. 361; Travers, *Gallipoli 1915*, p. 229.
 23. Plus 8,500 horses, 2,500 vehicles, forty guns, 220 machine guns, and eighty mine throwers; Erich von Tschischwitz, *Armee und Marine bei der Eroberung der Baltischen Inseln im Oktober 1917. Erfahrungen und Betrachtungen* (Berlin: Verlag R. Eisenschmidt, 1931), p. 32; naval forces consisted of two battle squadrons with five battleships each, one scouting group with eight small cruisers, one torpedo boat flotilla with one small cruiser and thirty-two torpedo boats, six U-boats, and one mine-sweeping flotilla with one small cruisers and sixty motorboats. In addition, a flotilla of seventy-two vessels, mostly fishing steamers, was employed. The transport fleet was composed of nineteen requisitioned steamers totaling about 154,000 tons. These forces were

- under command of Vice Admiral Erhard Schmidt. Reinhard Scheer, *Deutschlands Hochseeflotte im Weltkrieg. Persoenliche Erinnerungen von Admiral Scheer* (Berlin: Verlag Scherl, 1920), pp. 309–10.
24. Agnew, “From Where Did Our Amphibious Doctrine Come?” p. 56; Carl O. Schuster, “Baltic Assault: Operation Albion,” *Command Magazine* (July–August 1993), pp. 56–57; Randolph Kugler, *Das Landungswesen in Deutschland seit 1900* (Berlin: Oberbaum Verlag, 1989), p. 35.
25. Agnew, “From Where Did Our Amphibious Doctrine Come?” pp. 58–59; Allan R. Millet, “Assault from the Sea: The Development of Amphibious Warfare between the Wars: The American, British, and Japanese Experiences,” in *Military Innovation in the Interwar Period*, ed. Williamson Murray and Allan R. Millet (Cambridge, U.K.: Cambridge Univ. Press, 1998), p. 75.
26. Holger Herwig, “Innovation Ignored: The Submarine Problem; Germany, Britain, and the United States, 1919–1939,” in *Military Innovation in the Interwar Period*, ed. Murray and Millet, p. 234.
27. Karl Doenitz, *Memoirs: Ten Years and Twenty Days*, trans. R. H. Stevens in collaboration with David Woodward (Annapolis, Md.: Naval Institute Press, 1990), pp. 18–19, 21.
28. The manual was written by a group of instructors of the Naval Academy led by Capt. 1st Rank S. Stavitskiy. The final version of the manual was written by a commission headed by Capt. 1st Rank I. S. Isakov. A. Gakkell, “The Soviet Art of Naval Warfare in the Period between the Wars (1921–1941),” *Morskoy Sbornik* 10 (October 1976), p. 15; A. V. Basov, *Flot v Velikoy Otechestvennoy Voiny 1941–1945: Opyti operativno-strategicheskogo primeneniya* (Moscow: Nauka, 1980), pp. 50–52.
29. The following naval battles were fought: Savo Island (9 August 1942), Eastern Solomons (24 August), Cape Esperance (11–12 October), Santa Cruz Islands (26–27 October), Guadalcanal (12–15 November), Tassafaronga (30 November), and Rennell Island (29–30 January 1943). The U.S. Navy suffered tactical defeats in the battles of Savo Island, but the Japanese were unable to reach Allied transports; it won a tactical victory in the battle of Eastern Solomons, although the Japanese managed to land 1,500 additional troops on Guadalcanal. The U.S. Navy won a tactical victory in the battle of Cape Esperance, but the Japanese succeeded in their main objective of bringing fresh troops on the island. In the battle of Santa Cruz, the U.S. Navy inflicted larger losses than did the enemy, but the Japanese accomplished their main objective. The U.S. Navy suffered greater losses in terms of the ships sunk in the three-day battle of Guadalcanal but achieved an operational success because the U.S. forces went from the defensive onto the offensive. In the battle of Tassafaronga, the U.S. Navy suffered a severe defeat at the hands of an inferior but excellently trained and skillfully led Japanese force; it also suffered a tactical defeat in the last surface in the struggle for Guadalcanal, off Rennell Island. Samuel E. Morison, *History of United States Naval Operations in World War II*, vol. 5, *The Struggle for Guadalcanal, August 1942–February 1943* (Boston: Little, Brown, 1951), pp. 63–64, 107, 171, 286, 313–15, 363.
30. The Allies lost twenty-four warships with 126,240 tons (two aircraft carriers, six heavy cruisers, two light cruisers, and fourteen destroyers). The Japanese lost twenty-four warships with 134,839 tons (two battleships, one aircraft carrier, three heavy cruisers, one light cruiser, eleven destroyers, and six submarines). Morison, *History of United States Naval Operations in World War II*, vol. 5, p. 372.
31. Hermann Franke, ed., *Handbuch der neuzeitlichen Wehrwissenschaften*, vol. 1, *Wehrpolitik und Kriegfuehrung* (1936), (Berlin/Leipzig: Walter de Gruyter, 1936–39), p. 206; Wilhelm Stanger, *Grundzuege der Lehre von der Strategie. Studienbehelf fuer die K.K. Kriegsschule*, vol. 1, *Theorie mit Kuerzeren Bespielen* (Vienna: Verlag der K.K. Kriegsschule, 1884), p. 79.
32. Alfred T. Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land* (Boston: Little, Brown, 1911), pp. 31–32.
33. Franke, ed., *Handbuch der neuzeitlichen Wehrwissenschaften*, vol. 1, p. 206.
34. Stanger, *Grundzuege der Lehre von der Strategie*, vol. 1, p. 79.
35. Joseph Rodriguez, Jr., *How to Maximize the Advantages of Interior Lines at the Operational Level* (Fort Leavenworth, Kans.: School of

- Advanced Military Studies, U.S. Army Command and General Staff College, 1987), p. 5.
36. Tomislav Bolfek, "Rasprava o podeli i osnovnim karakteristikama operacija na JPV," *Mornarički Glasnik* (Belgrade) 6 (November–December 1978), p. 992.
37. Edward J. Marolda and Robert J. Schneller, *Shield and Sword: The United States Navy and the Persian Gulf War* (Washington, D.C.: Naval Historical Center, 1998), pp. 181–82.
38. *Upotreba Strategijskih Grupacija* (Privremeno Uputstvo) (Belgrade: Yugoslav Navy, n.d.), p. 97.
39. Gerhard Regner et al., trans., *Operative Kunst der Seestreitkräfte*, Teil II/1: *Seeoperationen und gemeinsame Handlungen der Flottenkräfte und Truppen der Front in Küstenrichtung* (Dresden: Friedrich Engels Military Academy, 1981), pp. 4–5. Originally published as *Operativnoye iskusstvo voyenno-morskogo flota* (Leningrad: A. S. Grechko Naval Academy, 1975).
40. U.S. Navy Dept., *Naval Transformation Roadmap 2003: Assured Access & Power Projection . . . from the Sea* (Washington, D.C.: 2003), p. 48.
41. The term "maritime trade" is used instead of the more widely used "sea lines of communications" (SLOC), and the associated anti-SLOC and pro-SLOC, because it accurately describes the real purpose of such major naval operations—destruction, neutralization, or protection of all elements of maritime trade, not only the merchant ships at sea. SLOC, in contrast, implies abstractions—imaginary lines along which the shipping moves.
42. Bolfek, "Rasprava o podeli i osnovnim karakteristikama operacija na JPV," p. 991.
43. Delimir Kolec, "Operacije na jadranskom pomorskom vojstvu," *Mornarički Glasnik* (Belgrade) 5 (September–October 1985), pp. 755–56.
44. *Ibid.*, p. 757.
45. Bolfek, "Rasprava o podeli i osnovnim karakteristikama operacija na JPV," p. 993.
46. *Ibid.*, p. 986.
47. Including eleven battleships, four large and four light aircraft carriers, four seaplane tenders, eighteen heavy and eight light cruisers, fifty-five destroyers, twenty-three transports with 6,500 landing troops embarked, thirteen tankers, twenty submarines, several smaller vessels, and about 250 carrier-based aircraft.
48. Including three fleet carriers with about 250 embarked aircraft, four heavy cruisers, fifteen destroyers, two oilers, and nineteen submarines; Samuel E. Morison, *History of United States Naval Operations in World War II*, vol. 4, *Coral Sea, Midway, and Submarine Actions, May 1942–August 1942* (Boston: Little, Brown, repr. 1984), p. 76.
49. Juergen Rohwer and Gerhard Huemmelchen, *Chronology of the War at Sea 1939–1945: The Naval History of World War Two*, 2nd rev. and exp. ed. (Annapolis, Md.: Naval Institute Press, 1992), p. 63.
50. Burkhard von Muellenheim-Rechberg, *Battleship Bismarck: A Survivor's Story* (Annapolis, Md.: Naval Institute Press, 1980), pp. 264–67.
51. Tomislav Bolfek, "Pomorske Operacije—oblik borbenih dejstava nase Ratne mornarice," *Mornarički Glasnik* (Belgrade) 5 (September–October 1977), pp. 765–66.
52. Giuseppe Fioravanzo, *A History of Naval Tactical Thought* (Annapolis, Md.: Naval Institute Press, 1970), p. 203.
53. H. Tietze, "Zu einigen Kategorien der Theorie der Taktik der Seestreitkräfte," *Militärwesen* (East Berlin) 3 (March 1983), p. 48.
54. Samuel Eliot Morison, *History of United States Naval Operations in World War II*, vol. 12, *Leyte, June 1944–January 1945* (Boston: Little, Brown, repr. 1984), p. 170.
55. Tietze, "Zu einigen Kategorien der Theorie der Taktik der Seestreitkräfte," p. 48.
56. Walter Jablonsky, "Die Seekriegführung im vierten Nahostkrieg," *Marine Rundschau* 11 (November 1974), p. 654.
57. JP 1-02 (2007), in contrast, defines a raid as "an operation to temporarily seize an area in order to secure information, confuse an adversary, capture personnel or equipment, or to destroy a capability; it ends with a planned withdrawal upon completion of the assigned mission." JP 1-02 (1 March 2007), p. 444.
58. Albert Lord and Klaus Toppeser, "Rolle und Beitrag der Seestreitkräfte," in *Der Golfkonflikt. Dokumentation, Analyse und Bewertung aus militärischer Sicht*, ed. Hartmut Zehrer (Herford, Ger., and Bonn: Verlag E.S. Mittler & Sohn, 1992), p. 197.

59. Stanley R. Arthur and Marvin Pokrant, "Desert Storm at Sea," *Proceedings/Naval Review* (1991), p. 86.
60. About five thousand Canadian troops, 1,075 British personnel, and fifty U.S. Rangers, organized in thirteen groups, landed on a ten-mile-wide front near the French port of Dieppe in the English Channel; "Dieppe Raid," in *The Oxford Companion to World War II*, ed. I. C. B. Dear (Oxford, U.K., and New York: Oxford Univ. Press, 1995), pp. 298–99; Rohwer and Huemmelchen, *Chronology of the War at Sea 1939–1945*, p. 158.
61. TF-16, under the command of Vice Admiral William F. Halsey, consisted of two aircraft carriers (*Enterprise and Hornet*), with their air complements, plus sixteen Army Air Corps B-25 bombers, on board, as well as four cruisers, eight destroyers, and two oilers. Samuel E. Morison, *History of United States Naval Operations in World War II*, vol. 3, *The Rising Sun in the Pacific 1931–April 1942* (Boston: Little, Brown, 1948), pp. 392–94, 398.
62. Tietze, "Zu einigen Kategorien der Theorie der Taktik der Seestreitkräfte," p. 49.